

## REMOTE SENSING OF LAND USE CHANGES IN U.S. METROPOLITAN REGIONS: TECHNIQUES OF ANALYSIS AND OPPORTUNITIES FOR APPLICATION

James R. Wray, U.S. Geological Survey, Geographic Applications Program, Washington, D.C.

### ABSTRACT OF ILLUSTRATED REPORT OF FINDINGS

With twin slide projectors and screens this ERTS investigator describes graphically the "Census Cities" ERTS experiment in urban change detection using remote sensors. Sample pages from a prototype looseleaf Atlas of Urban and Regional Change record land use at selected U.S. urban test sites at the time of the 1970 census, and the changes occurring 1970 to 1972. The relationship or model between land use data from sensors and socio-demographic data from the census is partly demonstrated. The example suggests how knowledge of land use changes acquired by sensors can be used to make estimates of population, and other attributes. The feasibility of nation-wide mapping of land use, and land use changes, by direct computer classification of ERTS-1 multispectral digital data is also demonstrated. An integrated system of time series coverages and sensor platforms, and the packaging of results in a user-interactive format, offers new opportunities for resource management. Potential applications in state and regional planning are many, and some are named. But the longer-range gains are likely to be improved understanding by legislators, managers and voters as to what it is that makes our country tick. One of the specific tasks could be the allocation of revenues to be shared. Because of ERTS our land and our world will never be the same to us again. In telling us the finiteness of both it challenges us to be better stewards of the remarkable--and only--home we have.

0820374N1

---

Publication authorized by Director, U.S. Geological Survey.  
Prepared for oral/visual presentation at NASA ERTS-1 Symposium,  
Washington, D.C., December 10-13, 1973.

PRECEDING PAGE BLANK NOT FILMED